Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte THIERRY LUCIDARME

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Appeal No. 2003-0191
Application 09/155,278

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ON BRIEF

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Before BARRETT, OWENS and GROSS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from the final rejection of claims 1-3, 5-9 and 11-14. Claims 4 and 10, which are all of the other claims in the application, stand objected to as being dependent from a rejected base claim but allowable if rewritten in independent form.

THE INVENTION

The appellant claims a radio station which, the appellant states, may be used particularly as a base station in cellular radio systems (specification, page 1, lines 2-3). Claim 1 is illustrative:

1. A radio station, comprising:

first and second hybrid transmission polarisation couplers;

first and second antennas respectively associated with said first and second hybrid transmission polarisation couplers, each antenna being arranged to generate two orthogonal electric field components in response to two respective quadrature radio signals from the polarisation coupler associated therewith;

at least one hybrid distribution coupler having a first output connected to a first input of the first polarisation coupler and a second output connected to a first input of the second polarisation coupler; and

at least one radio signal source delivering a radio signal to a first input of the distribution coupler.

THE REFERENCE

Runyon	5,966,102	Oct. 12, 1999 (filed Dec. 14, 1995)

THE REJECTION

Claims 1-3, 5-9 and 11-14 stand rejected under 35 U.S.C. § 102(b) as being unpatentable over Runyon.[1]

OPINION

We reverse the aforementioned rejection. We need to address only the sole independent claim, i.e., claim 1.

"Anticipation requires that every limitation of the claim in issue be disclosed, either expressly or under principles of inherency, in a single prior art reference." *Corning Glass Works v. Sumitomo Electric*, 868 F.2d 1251, 1255-56, 9 USPQ2d 1962, 1965 (Fed. Cir. 1989).

The appellant's claim 1 requires 1) first and second hybrid transmission polarization couplers, and 2) at least one hybrid distribution coupler having a first output connected to a first input of the first polarization coupler and a second output connected to a first input of the second polarization coupler.

Runyon discloses a radio station (col. 6, lines 24-27) having a polarization control network (18a) which includes a first polarization control module (81) for accepting a pair of

[1] Runyon is not prior art under 35 U.S.C. § 102(b). We treat the rejection as being under the subsection of § 102 which the examiner should have relied upon, i.e., § 102(e).

transmit signals (TX1, TX2) from a transmit source (col. 16, lines 61-64). In response to these transmit signals, polarization control module 81 outputs transmit signals to duplexers 80 and 82 (col. 17, lines 1-3). The duplexers output transmit signals to an antenna (10) which can transmit and receive electromagnetic signals and which includes radiating elements (12a and 12b) exhibiting dual polarization states (col. 10, lines 10-15; col. 16, lines 53-55; figure 10). Duplexers 80 and 82 also output signals received from the antenna to a second polarization control module (83) which outputs receive signals RX1 and RX2 (col. 17, lines 3-6). "The polarization control modules **81** and **83** can be implemented by a 0°/90°-type hybrid coupler, commonly described as a quadrature hybrid coupler" (col. 17, lines 8-11). The four ports of duplexers 80 and 82 can be combined to provide desired pairs of transmit and receive signals (col. 17, lines 6-8).

The examiner argues that Runyon's duplexers 80 and 82 are hybrid transmission polarization couplers (answer, page 3). A hybrid coupler in an antenna system is a hybrid junction used as a directional coupler, a hybrid junction being a waveguide or a transmission line arranged such that there are four ports, each port being terminated in its characteristic impedance, with

energy entering any one port being transferred, usually equally, to two of the three remaining ports.[2] A duplexer, in radar systems, is a device that isolates a receiver from a transmitter while permitting them to share the same antenna.[2] In response to the appellant's argument that a duplexer is not a hybrid polarization coupler (brief, page 4), the examiner argues that "the duplexer of Runyon is a device designed to allow an antenna to be used for both transmission and reception of signals simultaneously. A coupling is a means by which energy is transferred from one conductive or dielectric medium (optical waveguide) to another, including fortuitous occurrences. Since hybrid coupler is defined as a hybrid junction that forms a directional coupler, it is considered that couplers 80 and 82 act as a type of first and second hybrid transmission polarization couplers" (answer, pages 6-7).

Runyon's items 80 and 82, however, are not couplers but, rather, are duplexers. Runyon's discussion of his duplexers 80 and 82 is consistent with the definition of "duplexer" set forth above. That is, Runyon discloses that 1) duplexers 80 and 82

[2] Definitions of "hybrid coupler", "hybrid junction", "directional coupler" and "duplexer" are set forth in the appellant's reply brief (page 2).

receive transmit signals from polarization control module 81 and transmit signals to the antenna (col. 16, lines 53-55; col. 17, lines 1-3; figure 10), 2) the duplexers receive signals from the antenna and output receive signals to polarization control module 83 (col. 17, lines 3-6), and 3) the four ports of the pair of duplexers can be combined to provide desired pairs of transmit and receive signals (col. 17, lines 6-8). Runyon discloses that his polarization control modules 81 and 83 are implemented by hybrid couplers (col. 17, lines 8-12), but Runyon does not say that about the duplexers.

The examiner argues that Runyon discloses in figure 11 that polarization control module 81 has a first output connected to a first input of "the first polarization coupler" and a second output connected to a first input of polarization coupler 83 (answer, page 4). As shown in Runyon's figure 11, however, the two outputs of polarization control module 81 are connected to duplexers 80 and 82. Neither output is connected to a "first polarization coupler" or to polarization control module 83.

The examiner argues that Runyon's figure 12 discloses a hybrid coupler connected to the antenna (answer, page 6), but the examiner does not explain how this disclosure, in combination with the other disclosures in Runyon, is a disclosure of the

appellant's first and second hybrid transmission polarization couplers connected to at least one hybrid distribution coupler in the manner required by the appellant's claim 1.

For the above reasons we find that the examiner has not carried the burden of establishing a *prima facie* case of anticipation by Runyon of the radio station claimed in the appellant's claim 1. We therefore reverse the rejection of this claim and claims 2, 3, 5-9 and 11-14 that depend therefrom.

DECISION

The rejection of claims 1-3, 5-9 and 11-14 under 35 U.S.C. § 102(e) over Runyon is reversed.

REVERSED

	)	
LEE E. BARRETT	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
TERRY J. OWENS	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
ANITA PELLMAN GROSS	)	
Administrative Patent Judge	)	

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